

PATENT ABSTRACTS OF JAPAN

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(54) VIBRATION DAMPING PLATE

(57)Abstract:

PURPOSE: To select a suitable material of a viscoelastic body in a simple manner with no computation as well as to remarkably enhance a vibration damping effect with the selected material by using the viscoelastic body whose complex shearing elastic modulus at the working temperature satisfies specified conditions.

CONSTITUTION: In a vibration damping plate 1a, a viscoelastic body 3a is used, whose complex shearing elastic modulus $G=G_1+jG_2$ at the working temperature satisfies an expression I, wherein E represents the Young's modulus of the plate member 2 of the damping plate 1a. Since this damping plate 1a satisfies the conditions required by the first and the second expressions on G_1 and G_2 , the loss factor of the damping plate becomes maximum in the range of audio frequencies. In addition, since the damping plate 1a satisfies the condition required by the third expression on G_2/G_1 , it is possible to make the loss factor of the damping plate 1a equal to or more than about 0.05, so that its vibration damping effect can thereby be enhanced remarkably.

$$10^{-4}E \leq G_1 \leq 10^{-2}E$$

$$10^{-4}E \leq G_2 \leq 10^{-2}E$$

$$0.5 \leq G_2 / G_1 \leq 3$$



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